

REMARKS

Favorable reconsideration and allowance of the Application are respectfully requested. Claims 1-40 are pending in the present application with claims 1, 14, 21, and 29 being independent. Claims 37-40 have been added by this amendment, which do not add any new subject matter.

Allowable Subject Matter

Applicants note with appreciation the Examiner's indication on page 18 of the outstanding Office Action that claims 10-13, 25-28, and 33-36 would be allowable if rewritten in independent form and will be allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph. For at least the reasons detailed below. Applicants respectfully submit that all pending claims should be considered allowable.

Specification

The Examiner objected to the Abstract because of undue length. Applicants submit herewith a replacement Abstract which complies with 37 C.F.R. §1.72(b). Accordingly, withdrawal of the objection is respectfully requested.

The Examiner appears to object to the specification because it includes terminology that is different from that which is generally

accepted in the art to which this intention pertains. Specifically, the Examiner states that "the normal representation of Luminosity (L), Chroma (C), and Hue (H) representation is named the LCH color space." The Examiner also states that "the CIE/L*a*b* color space is information of an image signal related to tightness/brightness (L*), and the two chrominance channels, (a*,b*)." The Examiner then states that the specification of the present application, on page 25, lines 16-19 recites that "the color image signal includes information related to brightness, chroma and hue subject to vector operation in the CIE/L*a*b* color space.

Applicants fail to understand the Examiner's objection to the specification. Referring to the cited section of the specification it is taught, as stated above, that the color image signal includes information related to brightness, chroma, and hue and that this color image signal is then subject to vector operation in the CIE/L*a*b* color space. As such, Applicants are unable to determine how the specification does not provide art-accepted terminology, and thus respectfully request that the Examiner withdraw the objection or provide a detailed explanation of how the specification does not contain art-accepted terminology.

The Examiner also alleges on pages 3 of the Office Action that the Disclosure is objected to because "the application reveals unclear sentences." It appears that the Examiner fails to

understand what a "representative color" is, in particular because the Examiner cites page 33, lines 6-12 and 28-29 of the specification and suggests that it would be more meaningful if the information input apparatus 21 is replaced with information output apparatus 22.

Applicants would like to direct the Examiner's attention to page 28, lines 20+ of the present application, which clearly teaches that a representative color is defined as a color of maximum chroma. It is also further taught that if the source color provided by the information-input apparatus 21 lies between representative colors (R,G,B) on the hue scale, the point of convergence is then computed by linear interpolation. As such, it should now be clear that the specification provides clear sentences and that the information input apparatus 21 should not be replaced by the information output apparatus 22, as suggested by the Examiner. Accordingly, withdrawal of the objection is respectfully requested.

Drawings

The Examiner objected to Fig. 8 stating that it should be designated by a legend such as "Prior Art." Applicants would like to direct the Examiner's attention to page 2, line 27 to page 3, line 3 of the present application, which states that Fig. 8

illustrates a concept behind the related art color gamut compression described in PCT/JP98/01785, which is co-pending to the present application and was not published at the time of filing of the present application. Therefore, Fig. 8 is not prior art and should not be labeled as such.

The Examiner also objected to the drawings alleging that because drawings 2-4 illustrate an L*a*b color space while drawings 5-10 illustrate a LCH color space. The Examiner then further alleges that "it is unclear...what the advantage is for the Applicants to transform the L*a*b* to LCH color space for the latter set of drawings and not drawings 2-4 as well."

Applicants respectfully submit that this objection is improper, because the drawings fully comply with the 37 C.F.R. §1.81. 37 C.F.R. §1.81 recites in part that "[t]he applicant for a patent is required to furnish a drawing of his or her invention where necessary for the understanding of the subject matter sought to be patented." Applicants respectfully submit that the drawings in the present application provide the necessary understanding of the subject matter sought to be patented, and thus, the Examiner's objection, as stated above, is improper. Accordingly, Applicants respectfully request that the Examiner withdraw the objection.

The Examiner also objected to Fig. 1, in item 6 of the Office Action. Specifically, the Examiner states that because Applicants

refer to Fig. 1 for the other embodiments of the invention and that because page 25, line 2-4 of the present application teaches that Fig. 1 shows a color gamut compression apparatus according to the first embodiment, that the drawings are objected to. Applicants have amended the specification to recite that "Fig. 1 shows a color gamut compression apparatus according to a preferred embodiment." Accordingly withdrawal of the objection to the drawing is respectfully requested.

Rejections Under 35 USC §112

The Examiner rejected claims 5-8 and 17-20 under 35 USC §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. This rejection is respectfully traversed.

Applicants have amended the claims in an effort to overcome the minor informalities that the Examiner identified in the Office Action. Accordingly, withdrawal of the rejections is respectfully respected.

Rejections Under 35 USC §102

The Examiner rejected claims 1-8 and 14-20 under 35 USC §102(e) as being anticipated by *Ohta* (U.S Patent 5,875,260). This rejection is respectfully traversed insofar as it pertains to the presently pending claims.

Independent claims 1 and 14 are directed to a color gamut compression apparatus and method for converting a source color generated by an information-input apparatus into a target color inside a color gamut reproducible by an information-output apparatus. The apparatus includes: a point of convergence computation part for computing a point of convergence for a chromatic color such that the point of convergence has the same hue value as a hypothetical chromatic color that would be reproduced by the information-output apparatus based on a digital signal value for the information-input apparatus corresponding to a color determined by the source color, and lies inside the color gamut of the information output apparatus; a first point of compression computation part for computing a point of compression such that the point of compression lies on a substantially straight line connecting the point of convergence and the source color, and lies inside the color gamut of the information-output apparatus; and a compression part for converting the source color into the target color corresponding to the point of compression computed by said first point of compression computation part.

Ohta is directed to an image processing apparatus that converts an input color signal into a color signal that represents a color that is visually closer to a color represented by the input color signal by performing gamut mapping processing based on visual

characteristics of humans.

Applicants respectfully submit that *Ohta* fails to teach or suggest at least a first point of compression computation part for computing a point of compression such that the point of compression lies on a substantially straight line connecting the point of convergence and the source color, as recited in independent claims 1 and 14.

The Examiner alleges that *Ohta* teaches this feature in Figs. 3b-c by stating that "the point of compression (211) lies on the right of an equihue line" and further cites col. 5, lines 8-11 and lines 60-61 of *Ohta* for support thereof.

Applicants would like to direct the Examiner's attention to col. 4, lines 55-57, of *Ohta*, which teaches that "in Fig. 3(a), the path of gamut mapping for each of primary color...is defined as a parabola," emphasis added. Further, *Ohta* teaches in col. 4, lines 69-63, that "an input color signal which has been determined to be outside the color gamut of the image forming unit 450 is compressed along the path of the corresponding curve in the direction of the arrow until the signal is inside the color gamut," emphasis added. Therefore, *Ohta* does not compute a point of compression such that the point of compression lies on a substantially straight line connecting the point of convergence and the source color. In fact, *Ohta* clearly shows in Figs. 3a-c that an input image signal is

compressed along a parabolic path, which is not a straight line.

In contrast thereto, and referring to, for example, Fig. 2 of the present application, it can be clearly seen that the point of compression lies on a substantially straight line that connects the point of convergence and the source color.

Dependent claims 2-8 and 15-20 and new claims 37-38 should be considered allowable at least for depending on an allowable base claim.

Accordingly, in view of the above discussion, Applicants respectfully request that the Examiner withdraw the rejection.

Rejections Under 35 USC §103

The Examiner rejected claim 9 under 35 USC §103(a) as being obvious over *Ohta* and further in view of *Takahashi* et al (U.S. Patent 6,560,356); claims 21-24 and 29-32 under 35 USC §103(a) as being obvious over *Ohta* further in view of *Takahashi* et al. These rejections are respectfully traversed insofar as they pertain to the presently pending claims.

Independent claims 21 and 29 are directed to a color gamut compression apparatus and method for converting a source color generated by an information-input apparatus into a target color inside a color gamut reproducible by an information-output apparatus. The color gamut compression apparatus includes: a point

of convergence computation part for computing a point of convergence for a chromatic color such that the point of convergence has the same hue value as the source color, has the same brightness as one of a maximum chroma color, a mean value of the color gamut reproducible by the information-output apparatus, gravitational center value of the color gamut reproducible by the information-output apparatus, and median of the color gamut reproducible by the information-output apparatus, and lies inside the color gamut of the information-output apparatus; a first point of compression computation part for computing a point of compression such that the point of compression lies on a substantially straight line connecting the point of convergence and the source color, and lies inside the color gamut of the information-output apparatus; and a compression part for converting the source color into the target color corresponding to the point of compression computed by said first point of compression computation part.

In rejecting independent claims 21 and 29 the Examiner alleges that *Ohta* teaches that a point of compression is computed such that the point of compression lies on a substantially straight line connecting the point of convergence and the source color, as recited in claims 21 and 29. As clearly shown above regarding the rejection against claims 1 and 14, *Ohta* does not teach this

feature, e.g., that a point of compression lies on a substantially straight line connecting the point of convergence and the source color because *Ohta* teaches that an input image signal is compressed along a parabolic path. Therefore, the Examiner failed to establish a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met: (1) there must be some suggestion of motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference must teach or suggest all the claim limitations, see *In re Vaeck*, 947 F.2d 48, 20 USPQ2d 1438 (Fed. Cir. 1991).

Dependent claims 9, 22-24, 30-32, and new claims 39-40 should be considered allowable at least for depending from an allowable base claim.

Accordingly, in view of the above discussion, withdrawal of the rejections is respectfully requested.

Conclusion

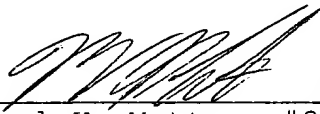
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Martin R. Geissler (Reg. No. 51,011) at the


telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Abstract